

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) A heat pump apparatus comprising an evaporator means, a control means in communication with at least one sensor means adapted to measure one or more variables representative of a temperature of an outer surface of the evaporator means, and a heat exchanger means operable to add heat from a working fluid from a high pressure side of the heat pump apparatus to the working fluid entering the evaporator means, wherein the control means is operatively connected with the heat exchanger means to add the heat when the control means determines that the temperature of the outer surface of the evaporator means is below a pre-selected temperature, thereby reducing or substantially eliminating the formation of ice on the outer surface of the evaporator means.

2. (previously presented) A heat pump apparatus comprising an evaporator means, a control means in communication with at least one sensor means adapted to measure one or more variables representative of a temperature of an outer surface of the evaporator means, and a heat exchanger means comprising a heating element positioned upstream of the evaporator means and downstream of an expansion means of the heat pump apparatus, the heat exchanger means operable to add heat to a working fluid entering the evaporator, wherein the control means is operatively connected with the heat exchanger means so that when the control means determines that the temperature of the outer surface of the evaporator means is below a pre-selected temperature, the heat exchanger means adds heat to the working fluid thereby reducing or substantially eliminating formation of ice on the outer surface of the evaporator means, and wherein the heat exchanger comprises a helically corrugated tube positioned within an outer housing, and the working fluid being heated is caused to flow over the tube and between the tube and the outer housing.

3. (previously presented) The heat pump apparatus as claimed in claim 1 wherein the at least one sensor means comprises a temperature sensor adapted to measure the temperature of the outer surface of the evaporator means.

4. (previously presented) The heat pump apparatus as claimed in claim 1 wherein the at least one sensor means comprises a temperature sensor adapted to measure the temperature of the working fluid exiting the evaporator means.

5. (previously presented) The heat pump apparatus as claimed in claim 1 wherein the at least one sensor means comprises a temperature sensor adapted to measure the temperature of the environment surrounding the evaporator means.

6. (previously presented) The heat pump apparatus as claimed in claim 1 wherein the at least one sensor means comprises a pressure sensor adapted to measure the pressure of the working fluid exiting the evaporator means.

7. (previously presented) The heat pump apparatus as claimed in claim 2 wherein the heat exchanger means comprises an electric heating element.

8. (previously presented) The heat pump apparatus as claimed in claim 7 wherein the electric heating element extends through the helically corrugated tube.

9. (previously presented) The heat pump apparatus as claimed in claim 8 wherein the helically corrugated tube forms part of an electrical circuit of the electric heating element.

10. (previously presented) The heat pump apparatus as claimed in claim 1 further comprising a compressor and a condenser and where the heat exchanger means obtains heat from the working fluid between the compressor and the condenser to transfer the heat to the working fluid entering the evaporator means.

11. (previously presented) The heat pump apparatus as claimed in claim 2 wherein the pre-selected temperature is between about 4°C and 0°C.

12. (previously presented) The heat pump apparatus as claimed in claim 1 wherein the heat exchanger means comprises a helically corrugated tube positioned in an outer housing, the

working fluid from the high pressure side being caused to flow through the tube to add heat to the working fluid caused to flow over the tube and between the tube and the outer housing.

13. (canceled)

14. (previously presented) A method of operating a heat pump having an evaporator downstream of an expansion means, the method comprising obtaining heat as required from a working fluid on a high pressure side of the heat pump to transfer to the working fluid on a low pressure side of the heat pump, prior to the working fluid entering the evaporator to reduce or substantially prevent ice from forming on the outer surface of the evaporator.

15. (previously presented) The method as claimed in claim 14 wherein the method comprises measuring one or more variables representative of a temperature of an outer surface of the evaporator and adding the heat to the working fluid entering the evaporator when the one or more variables indicate that the temperature has dropped below a pre-selected minimum.

16. (previously presented) The method as claimed in claim 15 wherein the method further comprises providing a controller to determine when icing of the evaporator is imminent based on the measurement of one or more variables.

17. (previously presented) The method as claimed in claim 16 wherein the method comprises heating the working fluid entering the evaporator with an electric heating element.

18. (previously presented) The method as claimed in claim 17 wherein the high pressure side is between a compressor and a condenser of heat pump.

19. (previously presented) The method as claimed in claim 18 in which the low pressure side of the heat pump is provided with a heat exchanger; the method comprising providing the heat exchanger with a helically corrugated tube within an outer housing, the working fluid being caused to flow over the tube and between the outer housing to be heated before it enters the evaporator.

20. (previously presented) The method as claimed in claim 14 wherein the method comprises adding heat to the working fluid while the heat pump is in operation.

21. (canceled)

22. (canceled)

23. (previously presented) The heat pump apparatus as claimed in claim 2 wherein the at least one sensor means comprises a temperature sensor adapted to measure the temperature of the outer surface of the evaporator means.

24. (previously presented) The heat pump apparatus as claimed in claim 2 wherein the at least one sensor means comprises a temperature sensor adapted to measure the temperature of the working fluid exiting the evaporator means.

25. (previously presented) The heat pump apparatus as claimed in claim 2 wherein the at least one sensor means comprises a temperature sensor adapted to measure the temperature of the environment surrounding the evaporator means.

26. (previously presented) The heat pump apparatus as claimed in claim 2 wherein the at least one sensor means comprises a pressure sensor adapted to measure the pressure of the working fluid exiting the evaporator means.

27. (previously presented) The heat pump apparatus as claimed in claim 2 further comprising a compressor and a condenser and where the heat exchanger means obtains heat from the working fluid between the compressor and the condenser to transfer the heat to the working fluid entering the evaporator means.

28. (previously presented) A heat pump apparatus comprising an evaporator, a controller in communication with at least one sensor adapted to measure one or more variables representative of a temperature of an outer surface of the evaporator, and a heat exchanger operable to add heat from a working fluid from a high pressure side of the heat pump apparatus to the working fluid entering the evaporator, wherein the controller is operatively connected with the heat exchanger to add the heat when the controller determines that the temperature of the outer surface of the evaporator is below a pre-selected temperature, thereby reducing or substantially eliminating the formation of ice on the outer surface of the evaporator.

29. (currently amended) A heat pump apparatus comprising an evaporator, a controller in communication with at least one sensor adapted to measure one or more variables representative of a temperature of an outer surface of the evaporator, and a heat exchanger [[means]] comprising a heating element positioned upstream of the evaporator and downstream of an expansion valve of the heat pump apparatus, the heat exchanger [[means]] operable to add heat to a working fluid entering the evaporator, wherein the controller is operatively connected with the heat exchanger so that when the controller determines that the temperature of the outer surface of the evaporator is below a pre-selected temperature, the heat exchanger adds heat to the working fluid thereby reducing or substantially eliminating formation of ice on the outer surface of the evaporator, and wherein the heat exchanger comprises a helically corrugated tube positioned within an outer housing, and the working fluid being heated is caused to flow over the tube and between the tube and the outer housing.

30. (previously presented) The heat pump apparatus as claimed in claim 28 wherein the at least one sensor comprises a temperature sensor adapted to measure the temperature of the outer surface of the evaporator .

31. (previously presented) The heat pump apparatus as claimed in claim 28 wherein the at least one sensor comprises a temperature sensor adapted to measure the temperature of the working fluid exiting the evaporator .

32. (previously presented) The heat pump apparatus as claimed in claim 28 wherein the at least one sensor comprises a temperature sensor adapted to measure the temperature of the environment surrounding the evaporator .

33. (previously presented) The heat pump apparatus as claimed in claim 28 wherein the at least one sensor comprises a pressure sensor adapted to measure the pressure of the working fluid exiting the evaporator .

34. (previously presented) The heat pump apparatus as claimed in claim 29 wherein the heat exchanger comprises an electric heating element.

35. (previously presented) The heat pump apparatus as claimed in claim 34 wherein the electric heating element extends through the helically corrugated tube.

36. (previously presented) The heat pump apparatus as claimed in claim 35 wherein the helically corrugated tube forms part of an electrical circuit of the electric heating element.

37. (previously presented) The heat pump apparatus as claimed in claim 28 further comprising a compressor and a condenser and where the heat exchanger obtains heat from the working fluid between the compressor and the condenser to transfer the heat to the working fluid entering the evaporator .

38. (previously presented) The heat pump apparatus as claimed in claim 29 wherein the pre-selected temperature is between about 4°C and 0°C.

39. (previously presented) The heat pump apparatus as claimed in claim 28 wherein the heat exchanger comprises a helically corrugated tube positioned in an outer housing, the working fluid from the high pressure side being caused to flow through the tube to add heat to the working fluid caused to flow over the tube and between the tube and the outer housing.

40. (previously presented) A method of operating a heat pump having an evaporator downstream of an expansion valve, the method comprising obtaining heat as required from a working fluid on a high pressure side of the heat pump to transfer to the working fluid on a low pressure side of the heat pump, prior to the working fluid entering the evaporator to reduce or substantially prevent ice from forming on the outer surface of the evaporator.

41. (previously presented) The method as claimed in claim 40 wherein the method comprises measuring one or more variables representative of a temperature of an outer surface of the evaporator and adding the heat to the working fluid entering the evaporator when the one or more variables indicate that the temperature has dropped below a pre-selected minimum.

42. (previously presented) The method as claimed in claim 41 wherein the method further comprises providing a controller to determine when icing of the evaporator is imminent based on the measurement of one or more variables.

43. (previously presented) The method as claimed in claim 42 wherein the method comprises heating the working fluid entering the evaporator with an electric heating element.

44. (previously presented) The method as claimed in claim 43 wherein the high pressure side is between a compressor and a condenser of heat pump.

45. (previously presented) The method as claimed in claim 44 in which the low pressure side of the heat pump is provided with a heat exchanger; the method comprising providing the heat exchanger with a helically corrugated tube within an outer housing, the working fluid being caused to flow over the tube and between the outer housing to be heated before it enters the evaporator.

46. (previously presented) The method as claimed in claim 40 wherein the method comprises adding heat to the working fluid while the heat pump is in operation.

47. (previously presented) The heat pump apparatus as claimed in claim 29 wherein the at least one sensor comprises a temperature sensor adapted to measure the temperature of the outer surface of the evaporator.

48. (previously presented) The heat pump apparatus as claimed in claim 29 wherein the at least one sensor comprises a temperature sensor adapted to measure the temperature of the working fluid exiting the evaporator.

49. (previously presented) The heat pump apparatus as claimed in claim 29 wherein the at least one sensor comprises a temperature sensor adapted to measure the temperature of the environment surrounding the evaporator.

50. (previously presented) The heat pump apparatus as claimed in claim 29 wherein the at least one sensor comprises a pressure sensor adapted to measure the pressure of the working fluid exiting the evaporator.

51. (previously presented) The heat pump apparatus as claimed in claim 29 further comprising a compressor and a condenser and where the heat exchanger obtains heat from the working fluid between the compressor and the condenser to transfer the heat to the working fluid entering the evaporator.